WHAT IS CLAIMED IS:

- 1. A purified and isolated human protein Z-dependent protease inhibitor characterized as:
 - (a) having a molecular weight of about 72 kDa,
 - (b) being a single chain protein with an N-terminal amino acid sequence of

Leu Ala Pro Ser Pro Gln Ser Pro Glu Thr 1 5 10

Pro Ala [SEQ ID NO:16], and

- (c) producing rapid inhibition of factor Xa in the presence of protein Z, calcium ions and cephalin.
- 2. A method of inhibiting factor Xa in serum or plasma comprising contacting said serum or plasma with an effective inhibitory amount of the human Protein Z-dependent protease inhibitor of Claim 1.
- 3. A purified and isolated DNA molecule comprising a nucleotide sequence encoding the 423 amino acid sequence of SEQ ID NO: 8.
- 4. A purified and isolated DNA molecule of Claim 3 having the nucleotide sequence of SEQ ID NO: 7.
- 5. A purified and isolated protein Z-dependent protease inhibitor having the 423 amino acid sequence of SEQ ID NO: 8.
- 6. A method of inhibiting factor Xa in serum or plasma comprising contacting said serum or plasma with an effective inhibitory amount of the human protein Z-dependent protease inhibitor of Claim 5.

- 7. A method of inhibiting blood coagulation in a patient in need thereof comprising administering to said patient a coagulation inhibitor selected from the group consisting of protein Z, ZPI and a combination of protein Z and ZPI in an amount sufficient to inhibit blood coagulation.
- 8. The method of Claim 7 in which the coagulation inhibitor is protein Z.
- 9. The method of Claim 7 in which the coagulation inhibitor is ZPI.
- 10. The method of Claim 9 in which the ZPI has the 423 amino acid sequence of SEQ ID NO:8.
- 11. The method of Claim 7 in which the coagulation inhibitor is a combination of protein Z and ZPI.
- 12. The method of Claim 11 in which the ZPI has the 423 amino acid sequence of SEQ ID NO:8.
- 13. A pharmaceutical composition comprising protein Z and ZPI in a pharmaceutically acceptable carrier or diluent.
- 14. The composition of Claim 13 in which the ZPI has the 423 amino acid sequence of SEQ ID NO:8.